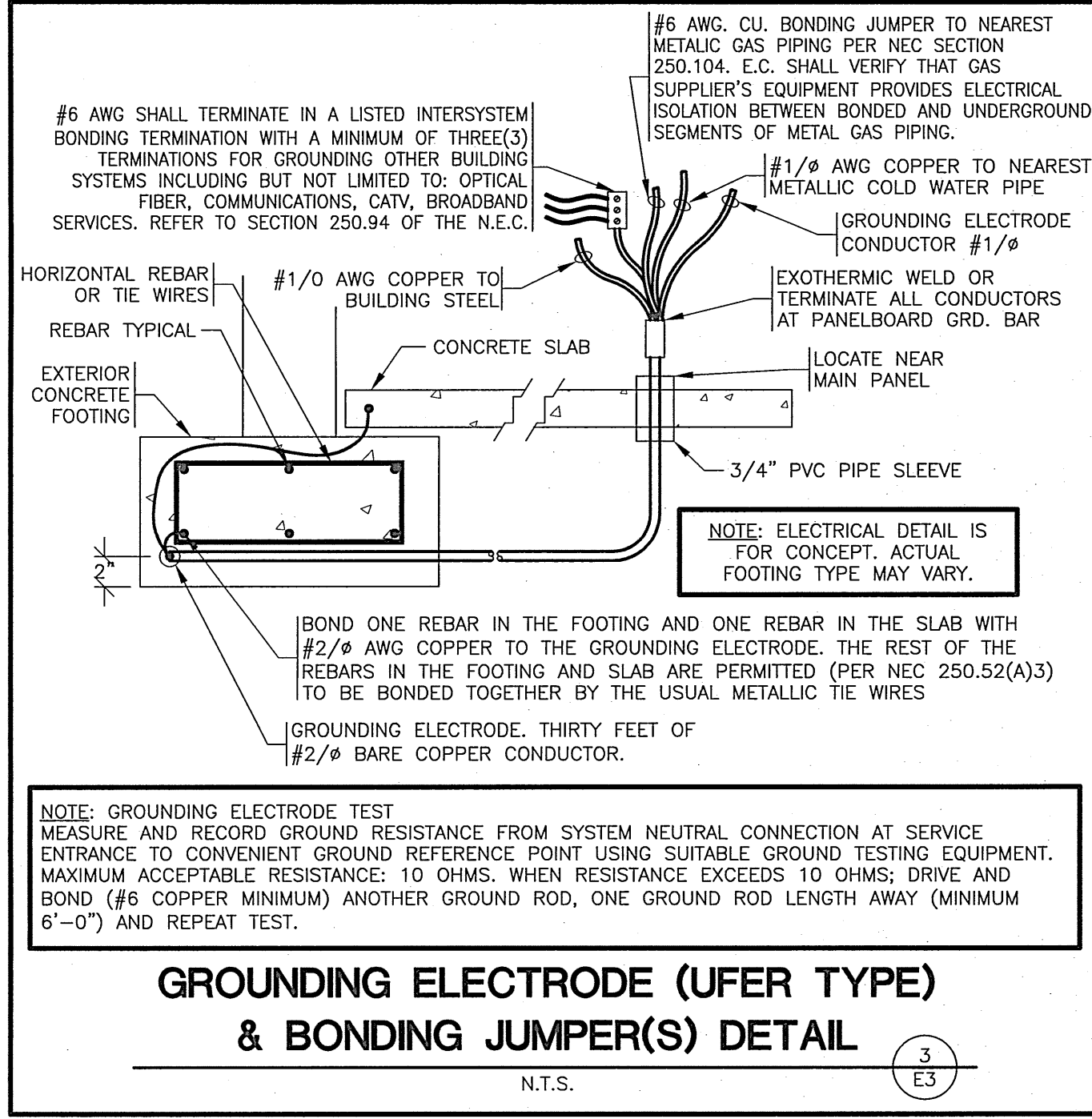
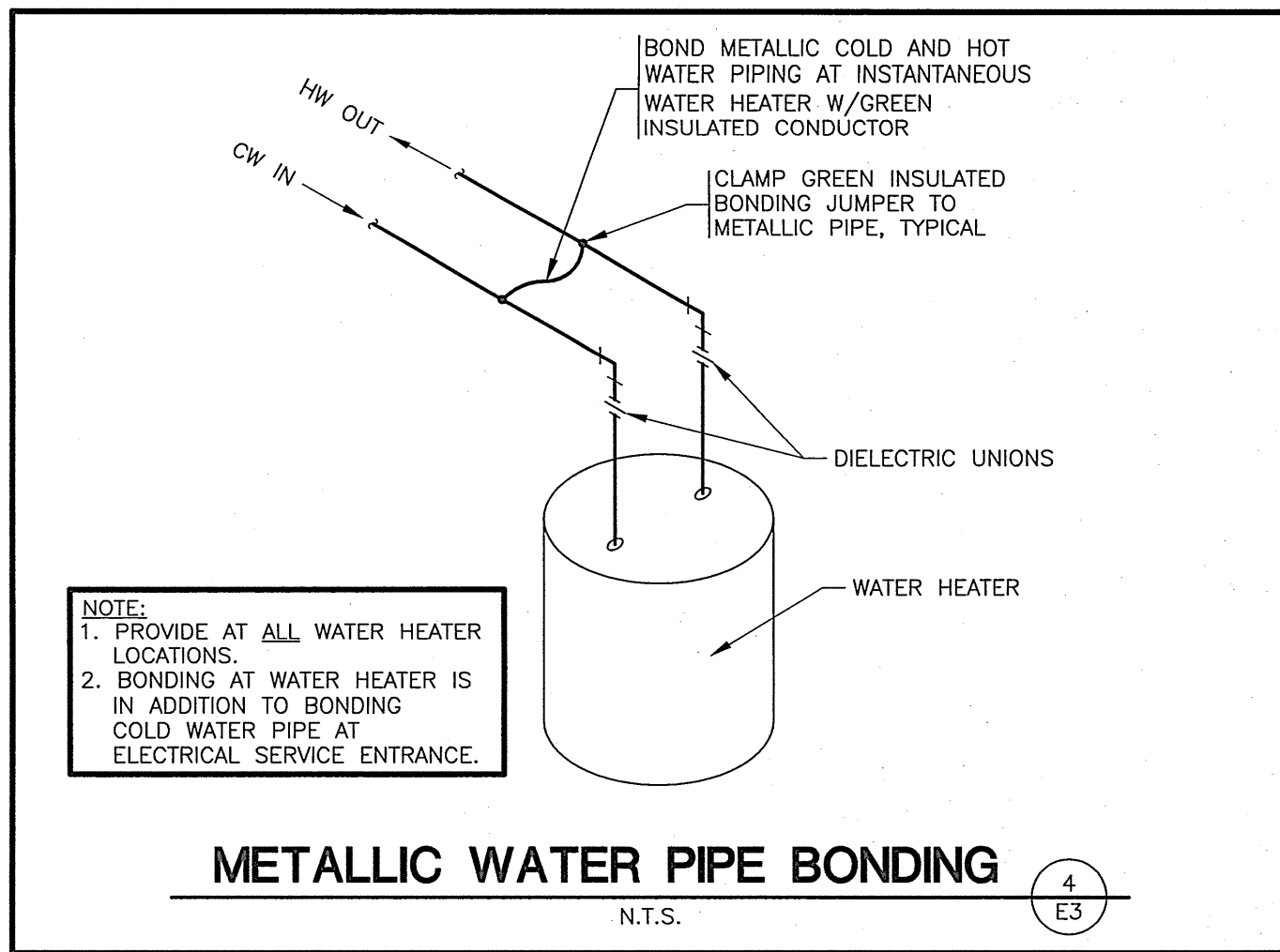


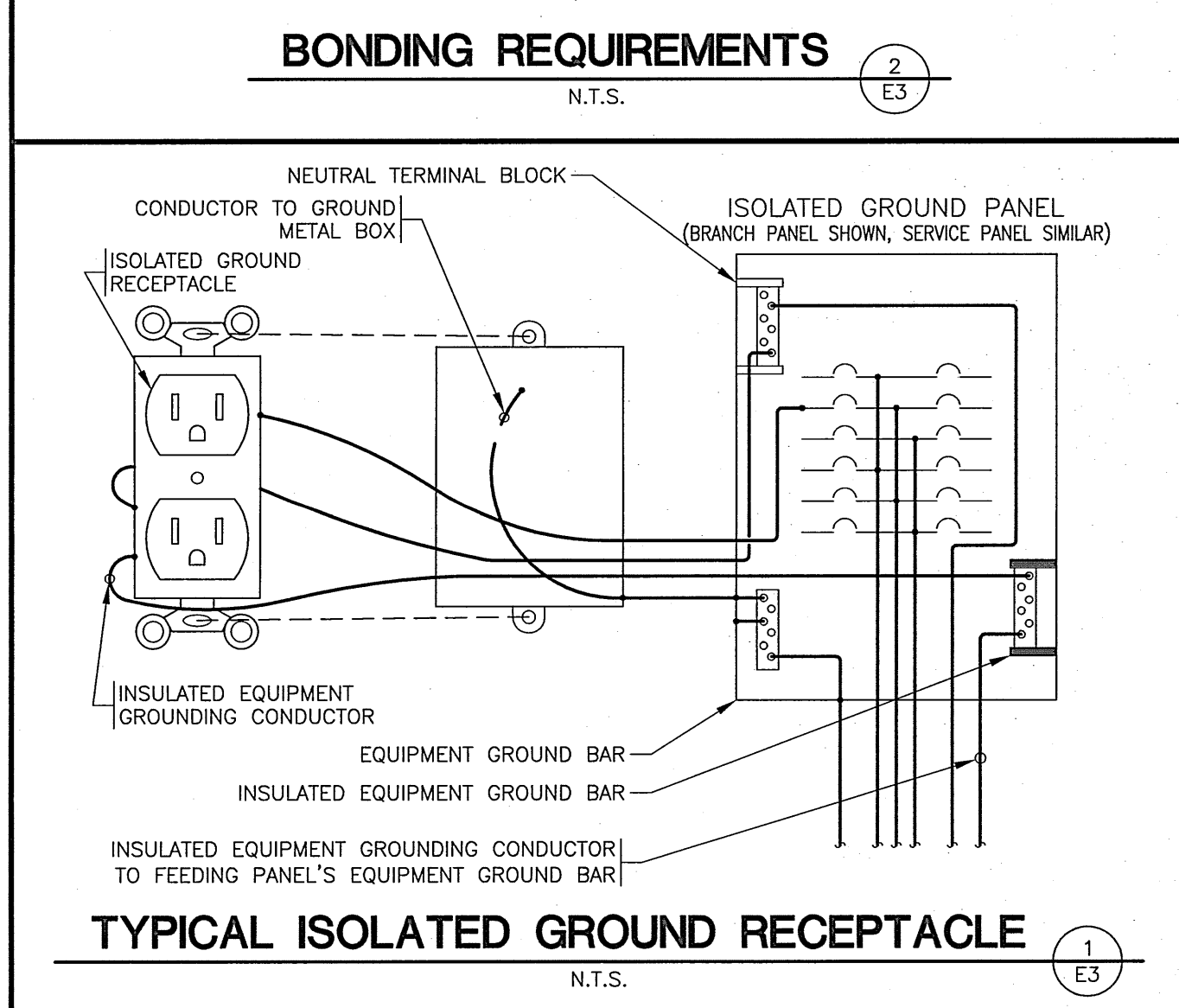
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JUL 23 2015
1234 E. SUNDRIE ST. SUITE 417
SPRINGFIELD, MO 65807



NOTE:

- BOND ALL NONCURRENT CARRYING METAL PARTS OF SERVICE EQUIPMENT (INCLUDING METER ENCLOSURE) TO GROUNDING ELECTRODE AS REQUIRED. PER NEC 250-92.
- THE GROUNDED NEUTRAL CONDUCTOR SHALL BE RUN TO AND BONDED TO EACH SERVICE DISCONNECTING MEANS ENCLOSURE IN ACCORDANCE WITH NEC 250-24c.
- BONDING OF OTHER ENCLOSURES SHALL BE IN ACCORDANCE WITH NEC 250-96.

SERVICE EQUIPMENT GROUNDING AND BONDING SHALL BE IN ACCORDANCE WITH	
NEC 250-66	NEC 250-92
NEC 250-24	NEC 250-93
NEC 250-28	NEC 250-95
NEC 250-130	NEC 250-90



ELECTRICAL SYMBOL LEGEND & ABBREVIATIONS

- \$ SINGLE POLE SWITCH
\$2 TWO POLE SWITCH
\$3 THREE-WAY SWITCH
\$MP MOTOR STARTING SWITCH WITH PILOT LIGHT
\$X CLASS 1, DIVISION 1 HAZARDOUS LOCATION RATED SWITCH ASSEMBLY
\$PW WALL MOUNTED OCCUPANCY SENSOR EQUAL TO "WATT STOPPER PW-100"
\$PW2 WALL MOUNTED OCCUPANCY SENSOR EQUAL TO "WATT STOPPER PW-200"
Ø SINGLE RECEPTACLE
Ø DUPLEX RECEPTACLE
Ø ISOLATED GROUND DUPLEX RECEPTACLE (ORANGE IN COLOR)
Ø QUADPLEX RECEPTACLE (TWO DUPLEX RECEPTACLES IN ONE 2-GANG BOX UNDER A SINGLE COVERPLATE)
Ø EXISTING UNPOWERED DUPLEX RECEPTACLE
Ø ISOLATED GROUND QUADPLEX RECEPTACLE (TWO ISO. GRD. DUPLEX RECEPTACLES IN ONE 2-GANG BOX UNDER A SINGLE RED IN COLOR COVERPLATE)
ACG ABOVE COUNTER GFCI (GROUND FAULT CIRCUIT INTERRUPTING) DUPLEX RECEPTACLE
WPO WEATHER PROOF GFCI (GROUND FAULT CIRCUIT INTERRUPTING) DUPLEX RECEPTACLE
▼ TELEPHONE OUTLET BOX WITH 1" CONDUIT TO ABOVE CEILING.
▼ TELEPHONE OUTLET FLOOR BOX. SEE DETAIL 5/E2.
▼ PHONE/DATA FLOOR BOX. SEE DETAIL 5/E2
▼ COMPUTER DATA OUTLET FLOOR BOX. SEE DETAIL 5/E2.
□ JUNCTION BOX
□ REMOTE PHOTO CONTROL
▼ COMPUTER DATA OUTLET BOX WITH 1" CONDUIT TO ABOVE CEILING.
4" SQUARE STEEL BOX MOUNTED FLUSH ON FLOOR W/QUADPLEX RECEPTACLE (SEE ABOVE RECEPTACLE DESCRIPTION). SEE DETAIL 5/E2 FOR INSTALLATION OF BOX.
4" SQUARE STEEL BOX MOUNTED FLUSH ON FLOOR W/QUADPLEX ISOLATED GROUND RECEPTACLE (SEE ABOVE ISOLATED GROUND RECEPTACLE DESCRIPTION). SEE DETAIL 5/E2 FOR INSTALLATION OF BOX.
4" SQUARE STEEL BOX MOUNTED FLUSH ON FLOOR W/QUADPLEX ISOLATED GROUND RECEPTACLE (SEE ABOVE ISOLATED GROUND RECEPTACLE DESCRIPTION). SEE DETAIL 5/E2 FOR INSTALLATION OF BOX.
2" x 4" RECTANGULAR STEEL BOX MOUNTED FLUSH ON FLOOR W/DUPLEX RECEPTACLE (SEE ABOVE RECEPTACLE DESCRIPTION). SEE DETAIL 5/E2 FOR INSTALLATION OF BOX.
NEMA L5-30R - SPECIAL RECEPTACLE
MOTOR
FUSED DISCONNECT (SAFETY) SWITCH W/ SWITCH AMPACITY / FUSE AMPACITY AS INDICATED.
NON-FUSED DISCONNECT (SAFETY) SWITCH
POWER OR LIGHTING PANEL W/PANEL DESIGNATION SHOWN ON PLAN (SIZES & MOUNTING INDICATED ON PLANS)
WALL/CEILING MOUNTED COMBINATION "EXIT/EMERGENCY" SIGN W/SHADING INDICATING FEATURES.
EMERGENCY LIGHTING FIXTURE WITH BATTERY
24 HOUR LIGHT, WIRE AHEAD OF ANY LOCAL SWITCHES.
FEEDING PANEL AND CIRCUIT NUMBER(S)
NOTE: EQUIPMENT GROUND CONDUCTOR NOT SHOWN
CIRCUIT CONDUCTORS
GROUNDED CIRCUIT CONDUCTOR (OR NEUTRAL)

AC AFF	LOCATED ABOVE COUNTER	RTU	PACKAGED ROOFTOP UNIT	RGS	RIGID GALVANIZED STEEL
BCU	INTERMEDIATE METALLIC TUBING	TS	TIME SWITCH	W	WALL OUTLET (46" AFF SEE MOUNTING HEIGHTS)
CDU	BLOWER COIL UNIT	LC	LIGHTING CONTROLLER	W	WALL OUTLET (46" AFF SEE MOUNTING HEIGHTS)
EF	CONDENSING UNIT	M	MOTOR STARTING	WP	WEATHERPROOF (ENCLOSURE)
EF	EXHAUST FAN	R	RED IN COLOR COVERPLATE	X	EXPLOSION PROOF ASSEMBLY
FU	ELECTRIC FURNACE	MP	MOTOR STARTING W/PILOT LIGHT	WP	WEATHERPROOF (ENCLOSURE)
FURN	GAS FURNACE	NL	NIGHT LIGHT	GFCI	GRD./FAULT CIRCUIT INTERRUPT
AHU	AIR HANDLER	PEC	PHOTOELECTRIC CONTROL	EMT	ELECTRICAL METALLIC TUBING
HP	HEAT PUMP UNIT	RGS	RIGID GALVANIZED STEEL	CM	CEILING MOUNTED

ELECTRIC SERVICE RESPONSIBILITIES

SEE SITE PLAN FOR UTILITY COMPANY CONTACT.					
ITEM NO.	DESCRIPTION (IF APPLICABLE)	FURNISHED BY		INSTALLED BY	
		UTILITY CO.	CONTRACTOR	UTILITY CO.	CONTRACTOR
1	SERVICE LATERAL	X		X	
2	SERVICE LATERAL RACEWAY		X		X
3	METER BASE	X			X
4	METER	X		X	
5	CT CABINET				
6	OH SERVICE RISER @ BUILDING				
7	SERVICE DROP POLE				
8	SERVICE RISER @ POLE	X		X	
9	TRANSFORMER PAD				
10	PAD MOUNT TRANSFORMER				

ALL SWITCHGEAR (PANELBOARDS, TRANSFORMERS, AND DISCONNECTS) WILL BE SUPPLIED BY THE OWNER (O'REILLY). SWITCHGEAR SHALL BE DIRECT ORDERED AND/OR RELEASED FROM THE LISTED ELECTRICAL EQUIPMENT DISTRIBUTOR:

GRAYBAR ELECTRIC CO. INC.
11885 LACKLAND ROAD
ST. LOUIS, MO. 63146

ATTN: SANDI YOUNG - DIRECT LINE: 1 (314) 573-2082
OR SAM CAST - DIRECT LINE: 1 (314) 573-2081
sandi.young@graybar.com or sam.cast@graybar.com
TOLL FREE = 1-800-289-5254
TOLL FREE FAX = 1-888-280-0128

PANELBOARD SCHEDULE															
MAINS: 400A MAIN LUGS ONLY				VOLTAGE: 240				ACCESSORIES:				NOTES:			
TYPE: SQUARE D, NOOD				PHASE: 1Ø, 3W				1. EQUIPMENT GROUND BAR							
MOUNTING: SURFACE				WIDTH: 20				2. **, SQ. D' Q02PAF - CKT. #15 AND 17							
SCCR: 10K AIC				SPACE(S): 42				3. *** GFI BREAKER							
CKT	CKT BRK	WIRE	LOAD DESCRIPTION	(KVA)	A(KVA)	B(KVA)	(KVA)	LOAD DESCRIPTION	WIRE	CKT BRK	CKT				
1	20A/1P	#10s	CUTOFF SAW	1.73	4.42		2.69	CDU-1	#8s	40A/2P	2				
3	20A/1P	#10s	STARTER/ALT. TESTER	1.64		4.33	2.69				4				
5	20A/1P	#10s	LATHE	1.70	4.39		2.69				6				
7	20A/1P	#12s	LIGHTING	1.29		3.98	2.69	CDU-2	#8s	40A/2P	8				
9	20A/1P	#12s	LIGHTING	1.29	3.98		2.69				10				
11	**20A/1P	#12s	WATER COOLER RECEPT.	0.54		3.23	2.69	CDU-3	#8s	40A/2P	12				
13	20A/1P	#12s	CDU RECEPTACLES	0.72	3.41		2.69				14				
15				4.75		7.44	2.69	CDU-4	#8s	40A/2P	16				
17	50A/2P	#8s	INST. WATER HEATER	4.75	6.35		1.60				18				
19	20A/1P	#12s	EXHAUST FAN	0.25		0.62	0.37	BUILDING LIGHTING	#12s	20A/1P	20				
21	20A/1P	#10s	STARTER/ALT. TESTER	1.68	2.05		0.37				22				
23	20A/1P	#10s	STARTER/ALT. TESTER	1.68		2.42	0.74	SITE LIGHTING	#10s	30A/2P	24				
25	20A/1P	#12s	LIGHTING	0.95	1.69		0.74				26				
27	125A/2P	--	PANEL "PLP" 07-23-15	11.92	13.22	13.22	1.30	SITE SIGN	#12s	20A/1P	28				
29			SPACE	0	11.51	12.81	1.30	SITE SIGN	#12s	20A/1P	30				
31			SPACE	0		1.80	1.80	FURN-1	#12s	20A/1P	32				
33			SPACE	0	1.80		1.80	FURN-2	#12s	20A/1P	34				
35			SPACE	0.05		1.85	1.80	FURN-3	#12s	20A/1P	36				
37	15A/2P	#12s	VENSTAR SURVEYOR	0.05	1.85		1.80	FURN-4	#12s	20A/1P	38				
39			SPACE	0		0.36	0.36	ISOLATED GRD. RECEPTS.	#12s	20A/1P	40				
41	15A/1P	#12s	DATA CONCENTRATOR RECEPT.	0.60	0.60		0	SPACE			42				
TOTAL PHASE A (KVA)				TOTAL PHASE B (KVA)				TOTAL CONNECTED LOAD (KVA)				TOTAL AMPS			
43.35				39.25				82.60				344.17			
07-23-15															

E TRANSFER SWITCH SCHEDULE

POSITION	CKT. BRK.	LOAD DESCRIPTION
A	15A/1P	OFFICE COMPUTER
B	15A/1P	COUNTER RECEPTACLES
C	20A/1P	PRINTER
D	20A/1P	SHOWROOM LIGHTING
E	15A/1P	TELEPHONE EQUIPMENT RECEPTACLE
F	15A/1P	SPACE

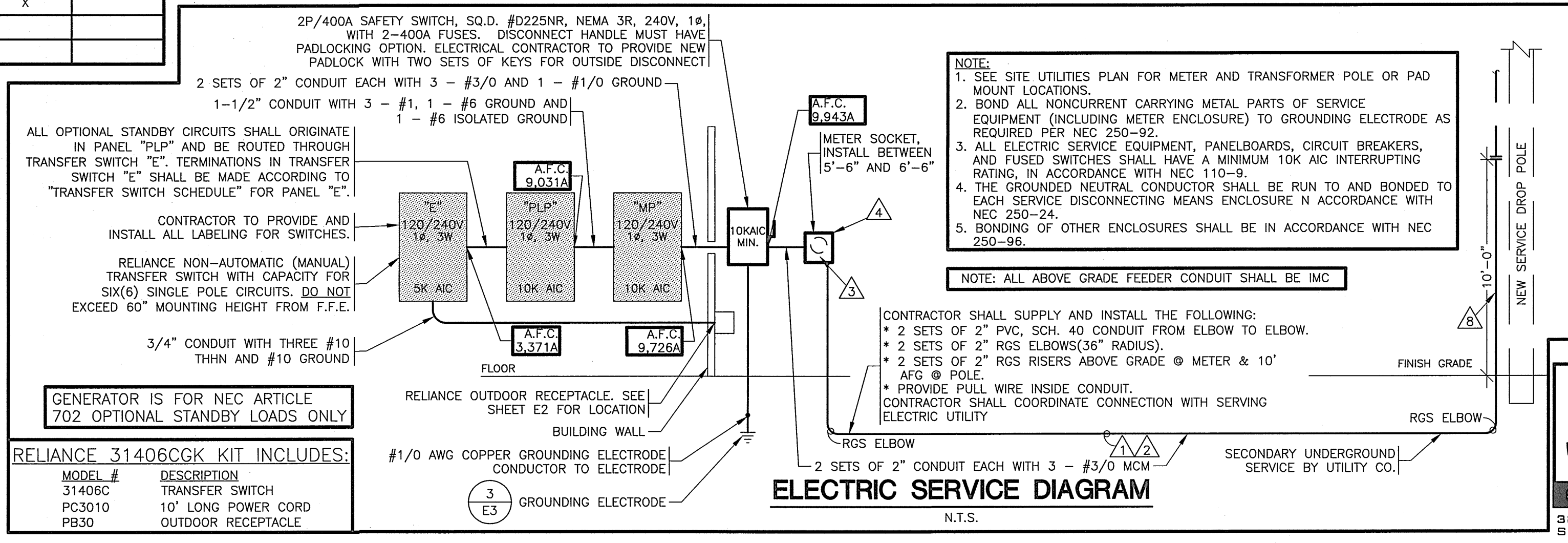
* CONTRACTOR SHALL WIRE LIGHTING CIRCUITS TO 20A BREAKERS.

NOTE: ALL BRANCH CIRCUITS SHALL HAVE AN EQUIPMENT GROUNDING CONDUCTOR ROUTED WITH THE CIRCUIT CONDUCTORS. THIS MEANS ALL CONDUITS MUST HAVE A GREEN WIRE INSTALLED IN THEM AND SIZED IN ACCORDANCE WITH TABLE 250.122 OF THE N.E.C.

CROSS-HATCH REPRESENTS CIRCUITS THAT ARE ASSOCIATED WITH OPTIONAL STANDBY GENERATOR CONTROL.

GENERAL ELECTRICAL NOTES

- DRAWINGS ARE DIAGRAMMATIC & ARE NOT TO BE SCALED. SEE THE ARCHITECTURAL PLANS & FIELD VERIFY CONDITIONS FOR DIMENSIONS.
- ALL ELECTRICAL WORK SHALL COMPLY WITH THE EDITION OF NFPA 70-NATIONAL ELECTRIC CODE (NEC) AS NOTED ON THE COVER SHEET.
- ALL WIRING SHALL BE IN CONDUIT, EXCEPT THAT MC-CABLE MAY BE SUBSTITUTED ONLY AS FOLLOWS:
 - MC-CABLE (MAXIMUM CABLE LENGTH OF 10'-0") MAY BE INSTALLED ONLY FOR BRANCH CIRCUIT WIRING TO LIGHT FIXTURES IN LAY-IN GRID CEILINGS.
 - MC-CABLE (MAXIMUM CABLE LENGTHS SHOWN ON DETAIL 1/E2) SHALL BE INSTALLED INSIDE OF THE FRONT CHECKOUT COUNTERS.
- FEEDER CONDUIT SHALL BE IMC OR RGS ABOVE GRADE & PVC BELOW GRADE WITH IMC OR RGS ELLS & RISERS. INTERIOR BRANCH CIRCUIT CONDUIT SHALL BE ELECTRICAL METALLIC TUBING. EXTERIOR BRANCH CIRCUIT CONDUIT SHALL BE PVC BELOW GRADE WITH IMC OR RIGID GALVANIZED STEEL CONDUIT CONTINUING ABOVE GRADE. (SPEC 26 05 33)
- COORDINATE ALL WORK WITH OTHER TRADES TO AVOID CONFLICTS. COORDINATION DOES NOT MEAN "I WAS HERE FIRST."
- ALL WIRING IN FINISHED SPACES SHALL BE CONCEALED, UNLESS NOTED OTHERWISE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING A COMPLETE & FUNCTIONAL SYSTEM IN ACCORDANCE WITH THE INTENT OF THE PLANS, WHETHER OR NOT EVERY ELEMENT THEREOF IS SPECIFICALLY CALLED OUT.
- COORDINATE ALL EQUIPMENT ROUGH-IN CONNECTION REQUIREMENTS.
- ALL OUTLET BOXES SHALL BE METALLIC. (SPEC 26 05 34)
- ALL CAULKING ON BUILDING PENETRATIONS SHALL BE ELASTOMERIC POLYURETHANE (NO EXCEPTIONS), EQUAL TO "VULKEM" 116. ANY CONTRACTOR WHO USES SILICONE OR ANY OTHER CAULKING WILL BE REQUIRED TO REMOVE & REPLACE WITH ELASTOMERIC POLYURETHANE.
- RECEPTACLES INSTALLED IN RESTROOMS SHALL BE GFCI TYPE OR SHALL BE PROTECTED BY A GFI DEVICE.
- ALL DEVICES SHALL BE IVORY & SHALL BE EQUAL TO THE FOLLOWING:
 - SINGLE POLE SWITCHES ---
 - THREE-WAY SWITCHES ---
 - DUPLEX RECEPTACLE --- (SPEC 26 27 26)
 - GFCI DUPLEX RECEPTACLE ---
 - ISO. GRD. RECEPTACLES ---
- USE DEVICE PLATES MANUFACTURED BY THE DEVICE MANUFACTURER. (SPEC 26 27 26)
- FEEDER & BRANCH CIRCUIT CONDUCTORS SHALL BE COPPER, STRANDED, 600V THHN/THWN INSULATION. EXCEPTION: WIRE SIZES #10 AWG & SMALLER SHALL BE SOLID. (SPEC 26 05 19)
- CONTRACTOR SHALL PROVIDE A TYPED CIRCUIT DIRECTORY FOR ALL PANELS. (SPEC 26 05 53)
- CONTRACTOR SHALL PROVIDE A ONE(1) YEAR WARRANTY ON ALL WORK PERFORMED.
- CONTRACTOR SHALL PROVIDE NEW WORKING LAMPS IN ALL LIGHT FIXTURES AT JOB COMPLETION.
- CONTRACTOR SHALL COORDINATE WITH & SHALL INCLUDE ALL FEES FOR THE SERVING "ELECTRIC UTILITY CO." TO PROVIDE ELECTRIC SERVICE AS SHOWN. CONTRACTOR SHALL ALSO INCLUDE ALL FEES FOR THE "SERVING PHONE COMPANY" TO INSTALL NO LESS THAN 10 PAIR CABLE TO BUILDING.
- CONTRACTOR SHALL ARRANGE FOR & INCLUDE ALL PERMITS & FEES FOR HIS SCOPE OF WORK.
- CONTROL WIRING BY HVAC CONTRACTOR. FINAL CONNECTIONS BY HVAC CONTRACTOR. SEE SHEET M1.
- APPROVED MANUFACTURERS:
 - PANELBOARDS & SAFETY SWITCHES (DISCONNECTS):
 - "SQUARE D"
 - "Q.E."
 - "SIEMENS"
 - "CUTLER-HAMMER"(SPEC 26 24 00)
 - DEVICES:
 - "HUBBELL"
 - "LEVITON"
 - "PASS & SEYMOUR"
 - "HUBBELL"(SPEC 26 27 26)
 - FLOOR BOXES:
 - "STEEL CITY"
 - "APPLETON"
 - "HUBBELL"(SPEC 26 05 34)



NOTE:

- SEE SITE UTILITIES PLAN FOR METER AND TRANSFORMER POLE OR PAD MOUNT LOCATIONS.
- BOND ALL NONCURRENT CARRYING METAL PARTS OF SERVICE EQUIPMENT (INCLUDING METER ENCLOSURE) TO GROUNDING ELECTRODE AS REQUIRED PER NEC 250-92.
- ALL ELECTRIC SERVICE EQUIPMENT, PANELBOARDS, CIRCUIT BREAKERS, AND FUSED SWITCHES SHALL HAVE A MINIMUM 10K AIC INTERRUPTING RATING, IN ACCORDANCE WITH NEC 110-9.
- THE GROUNDED NEUTRAL CONDUCTOR SHALL BE RUN TO AND BONDED TO EACH SERVICE DISCONNECTING MEANS ENCLOSURE IN ACCORDANCE WITH NEC 250-24.
- BONDING OF OTHER ENCLOSURES SHALL BE IN ACCORDANCE WITH NEC 250-96.

NOTE: ALL ABOVE GRADE FEEDER CONDUIT SHALL BE IMC

CONTRACTOR SHALL SUPPLY AND INSTALL THE FOLLOWING:

- 2 SETS OF 2" PVC SCH. 40 CONDUIT FROM ELBOW TO ELBOW.
- 2 SETS OF 2" RGS ELBOWS(36" RADIUS).
- 2 SETS OF 2" RGS RISERS ABOVE GRADE @ METER & 10'
- AFG @ POLE.
- PROVIDE PULL WIRE INSIDE CONDUIT.
- CONTRACTOR SHALL COORDINATE CONNECTION WITH SERVING ELECTRIC UTILITY.

FINISH GRADE

NEW SERVICE DROP POLE

RGS ELBOW

SECONDARY UNDERGROUND SERVICE BY UTILITY CO.

GROUNDING ELECTRODE

RELiance 31406CGK KIT INCLUDES:

MODEL #	DESCRIPTION
31406C	TRANSFER SWITCH
PC3010	10' LONG POWER CORD
PB30	OUTDOOR RECEPTACLE

GENERATOR IS FOR NEC ARTICLE 702 OPTIONAL STANDBY LOADS ONLY

RELiance 31406CGK KIT INCLUDES:

MODEL # 31406C

DESCRIPTION TRANSFER SWITCH

10' LONG POWER CORD

OUTDOOR RECEPTACLE

SGE

SMITH-GOTH ENGINEERS, INC.

3855 S. JEFFERSON AVE. P: 417-882-2200

SPRINGFIELD, MO 65807 F: 417-882-1188

WWW.SMITHGOTH.COM

REGISTERED PROFESSIONAL ENGINEER
83322PE
7/23/15
OREGON
JULY 14, 2015
NORMAN E. GOTH

Expires: 6/30/17

Thomas A. Lundberg
ARCHITECT
1730 East Sunshine, Suite 407
Springfield, Missouri 65804
e-mail: architect@easternschneider.com

New O'Reilly Auto Parts Store:
IVY STREET
JUNCTION CITY, OR

O'Reilly AUTO PARTS
233 SOUTH PATTERSON
SPRINGFIELD, MISSOURI 65802
417-862-2674 PHONE

DATE: 09-27-13
REVISION DATE: 12-31-13
04-23-14, 06-05-15, 07-23-15

COMM # 3484

E3 of 4

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